# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:          ORJAN FRITZ ET AL.

Serial No.:                    09/867,429

Filed:                         May 31, 2001

For:                           METHOD, AND ARRANGEMENT IN A COMMUNICATIONS NETWORK

Group No.:                     2625

Examiner:                      King Y. Poon


**MAIL STOP APPEAL BRIEF-PATENTS**
Commissioner for Patents
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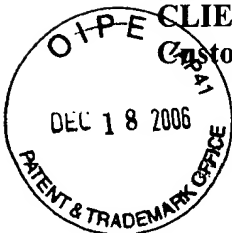## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re application of: | Orjan Fritz et al. |
| Serial No.: | 09/867,429 |
| Filed: | May 13, 2001 |
| For: | METHOD, AND ARRANGEMENT IN A COMMUNICATIONS NETWORK |
| Technology Center: | 2600 |
| Group No.: | 2625 |
| Examiner: | King Y. Poon |

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## <u>APPEAL BRIEF</u>

The Appellants have appealed to the Board of Patent Appeals and Interferences from

the decision of the Examiner dated June 8, 2006, finally rejecting Claims 1-71. The Appellants

filed a Notice of Appeal on October 10, 2006, which was received by the U.S. Patent and

Trademark Office on October 16, 2006. The Appellants respectfully submit this brief on appeal.

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## Real Party in Interest

This application is currently owned by National Semiconductor Corporation as indicated by an assignment from the inventors to Allgon AB recorded on May 31, 2001 in the Assignment Records of the United States Patent and Trademark Office at Reel 012106 and Frame 0643 and an assignment from Allgon AB to National Semiconductor Corporation recorded on January 18, 2002 in the Assignment Records of the United States Patent and Trademark Office at Reel 012488 and Frame 0570.

## Related Appeals or Interferences

None. There are no appeals or interferences that will directly affect, be directly affected by, or have a bearing on the Board's decision in this pending appeal.

## Status of Claims

Claims 1-71 have been rejected pursuant to a final Office Action dated June 8, 2006.

Claims 1-71 are presented for appeal. A copy of all pending claims is provided in Appendix A.

**<u>Status of Amendments after Final</u>**

The Appellants filed a RESPONSE TO FINAL OFFICE ACTION on August 8, 2006 and requested reconsideration of the claim rejections and requested an Advisory Action. The Examiner issued an Advisory Action on August 22, 2006 but did not allow any claims. No amendments were made to the claims after the final rejection dated June 8, 2006.

# SUMMARY OF CLAIMED SUBJECT MATTER

*The following summary refers to disclosed embodiments and their advantages but does not delimit any of the claimed inventions.*

## In General

The Appellants' invention comprises a system and a method for printing a document in a data communications system. In one advantageous embodiment of the method of the invention the communications system 401 comprises a processing unit 402 that comprises an entity 404 (also referred to as entity 501) and a printer 403 that comprises a printer entity 405 (also referred to as printer entity 601). (Specification, Page 7, Line 25 to Page 8, Line 5, Figure 4). The entity (404, 501) comprises a Bluetooth protocol stack that implements a wireless printer protocol. (Specification, Page 8, Lines 8-11, Figure 4). The printer protocol in the entity (404, 501) comprises a printer client that wirelessly communicates with a printer server in the printer entity (405, 601) in the printer 403. (Specification, Page 8, Lines 11-14, Figure 4).

In addition, printer entity (405, 601) of the communications system 401 comprises a Bluetooth protocol stack that implements a wireless printer protocol. (Specification, Page 11, Lines 5-8, Figure 4). The printer protocol in the printer entity (405, 601) comprises a printer server that wirelessly communicates with a printer client in the entity (404, 501) in the processing unit 402. (Specification, Page 11, Lines 8-12, Figure 4).

In one advantageous embodiment of the method of the invention for printing a document the method establishes a bi-directional wireless asynchronous connection-less

(ACL) connection between the processing unit 402 and the printer 403 by means of a wireless printer protocol, a Bluetooth protocol stack and an air interface 406. (Specification, Claim 1, Figure 4, Figure 7). The printer protocol calls a Logical Link Control and Adaptation Protocol (L2CAP) to request a connection. (Specification, Claim 1, Figure 4, Figure 7).

A connection is then established for one or more print jobs between the printer client 1001 and the printer server 1002. Then configuration parameters between the printer client 1001 and the printer server 1002 are negotiated. (Specification, Claim 1, Figure 4, Figure 7). Then "keep alive messages" are repeatedly sent from the printer client 1001 to the printer server 1002 and from the printer server 1002 to the printer client 1001 "wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters." (Specification, Claim 1, Figure 4, Figure 7). Then a print job is started. Print data is sent from the processing unit 402 to the printer 403. Then the print job is stopped. Lastly, the connection is closed between the processing unit 402 and the printer 403. (Specification, Claim 1, Figure 4, Figure 7).

The invention also comprises advantageous embodiments of various apparatus elements that carry out the method of the invention.

<u>Support for Independent Claims</u>

*Note that, per 37 C.F.R. § 41.37, only the independent claims are discussed in this section. The discussion of the claims in this section is for illustrative purposes and is not intended to affect the scope of the claims.*

A. Regarding Claim 1, a method for printing a document in a data communications system 401 is claimed. The communications system 401 comprises a processing unit 402 that includes a printer client (404, 1001) and a printer 403 that includes a printer server (405, 1002). (Specification, Page 7, Line 25 to Page 8, Line 5, Figure 4, Figures 10-15). The processing unit 402 and the printer 403 communicate with each other using a wireless printer protocol, a Bluetooth protocol stack and an air interface 406. (Specification, Page 7, Line 25 to Page 8, Line 5, Figure 4). The Bluetooth protocol stack includes a wireless printer protocol and a Logical Link Control and Adaptation Protocol (L2CAP). (Specification, Page 13, Lines 15-18, Figure 3).

The method comprises establishing (step 701) a bi-directional wireless asynchronous connection-less (ACL) connection between the processing unit 402 and the printer 403 by means of the printer protocol calling the L2CAP requesting connection and the L2CAP creating the connection. (Specification, Page 13, Lines 15-18, Figure 3, Figure 7). Then a connection is established (step 702) for one or more print jobs between the printer client 1001 and the printer server 1002. (Specification, Page 13, Lines 19-20, Figure 7).

Then configuration parameters are negotiated (step 703) between the printer client 1002 and the printer server 1002. (Specification, Page 13, Lines 21-22, Figure 7). Then "keep alive messages" are repeatedly sent from the printer client 1001 to the printer server 1002 and from the printer server 1002 to the printer client 1001 (step 704) "wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters." (Specification, Page 17, Lines 23-25, Figure 7; Page 19, Lines 9-12, Figure 13). Then a print job is started (step 705) and print data is sent from the processing unit 402 to the printer 403 (step 706). Then the print job is stopped (step 707) and the connection is closed between the processing unit 402 and the printer 403 (step 708). (Specification, Page 14, Lines 1-5, Figure 7).


B. Regarding Claim 35, an entity 501 in a processing unit 402 is claimed. The entity 501 comprises a Bluetooth protocol stack that comprises a Logical Link Control and Adaptation Protocol (L2CAP). (Specification, Page 8, Lines 9-14, Figure 5). The Bluetooth protocol stack further comprises a wireless printer protocol that comprises a printer client 1001 that communicates with a printer server 1002 in the printer 403 by means of the Bluetooth protocol stack and air interface 406. (Specification, Page 8, Lines 9-14, Figure 5).

The entity 501 comprises an establishing device 502 that establishes a bi-directional wireless ACL connection to the printer 403 by calling the L2CAP protocol to request a connection. (Specification, Page 8, Lines 16-18, Figure 5). The entity 501 also comprises an establishing device 503 that establishes a connection for one or more print jobs. (Specification,

Page 8, Lines 20-22, Figure 5). The entity 501 also comprises a negotiating device 504 that negotiates configuration parameters with the printer server 1002 in the printer 403. (Specification, Page 8, Lines 20-31, Figure 5).

The entity 501 also comprises a sending device 509 that sends "keep alive messages" repeatedly to the printer server 1002 "wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters." (Specification, Page 9, Lines 7-8, Figure 5). The entity 501 also comprises (1) a starting device 513 that starts a print job and (2) a sending device 515 that sends print data to the printer server 1002, and (3) a stopping device 520 that stops the print job, and (4) a closing device 522 that closes the connection between the processing unit 402 and the printer 403. (Specification, Page 9, Line 16 to Page 11, Line 2, Figure 5).

C.   Regarding Claim 53, a printer entity 601 in printer 403 is claimed. The printer entity 601 comprises a Bluetooth protocol stack that comprises a Logical Link Control and Adaptation Protocol (L2CAP). (Specification, Page 11, Lines 5-12, Figure 6). The Bluetooth protocol stack further comprises a wireless printer protocol that comprises a printer server 1002 that communicates with a printer client 1001 in the processing unit 402 by means of the Bluetooth protocol stack and air interface 406. (Specification, Page 11, Lines 5-12, Figure 6).

The printer entity 601 comprises a negotiating device 605 that negotiates configuration parameters with the printer client 1001 in the processing unit 402. (Specification, Page 11, Lines 21-22, Figure 6). The printer entity 601 also comprises a sending device 609 that sends

"keep alive messages" repeatedly to the printer client 1001 "wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters." (Specification, Page 12, Lines 1-12, Figure 6; Page 19, Lines 9-12, Figure 13).

The printer entity 601 also comprises a starting device 612 that starts a print job and a receiving device 614 that receives print data from the printer client 1001, and a stopping device 620 that stops the print job. (Specification, Page 12, Lines 8-10, Figure 6).

## Support for Dependent Claims

*Note that, per 37 C.F.R. § 41.37, the dependent claims that are argued separately are discussed in this section. The discussion of the claims in this section is for illustrative purposes and is not intended to affect the scope of the claims.*

A. Regarding Claim 10, the method comprises a step wherein a configuration request message (1101, 1103, 1107) is responded to by the printer server 1002 in a response message (1102, 1104, 1108) indicating whether the configuration options in the configuration request message (1101, 1103, 1107) are supported by the printer server 1002. (Specification, Page 17, Line 15 to Page 18, Line 22, Figures 11a, 11b, 11c).

B. Regarding Claim 11, the method comprises a step wherein a further configuration request message (1105, 1109) is sent from the printer client 1001 to the printer server 1002 if the configuration options are not supported by the printer server 1002, wherein the further

configuration request message (1105, 1109) includes a suggestion of further configuration options which differs from the earlier suggestion. (Specification, Page 18, Lines 1-22, Figures 11b, 11c).

C. Regarding Claim 12, the method comprises a step wherein a set attribute request message 1201 is sent from the printer client 1001 to the printer server 1002 after negotiating the configuration parameters, wherein the set attribute request message 1201 comprises a coding table concerning a negotiated coding type. (Specification, Page 18, Lines 25-31, Figure 12).

D. Regarding Claim 15, the method comprises a step wherein a keep alive timer (510, 610) is implemented in the printer client 1001 and in the printer server 1002, and the method further comprises a step of starting the keep alive timer (510, 610) at one of the printer server 1001 and the printer client 1002 each time a valid message is received from the other of the printer server 1001 and the printer client 1002. (Specification, Page 19, Lines 20-27, Figure 13a).

E. Regarding Claim 16, the method comprises a step wherein a connection between the printer client 1001 and the printer server 1002 is closed when the keep alive timer (510, 610) expires. (Specification, Page 19, Lines 7-19, Figure 13a).

F. Regarding Claim 21, the method comprises a step wherein a message 1406 is sent from the printer server 1002 to the printer client 1001 that indicates that the printer 403 is out of paper. (Specification, Page 20, Line 26 to Page 21, Line 6, Figure 14).

G. Regarding Claim 39, an entity 501 is claimed in which a negotiating device 504 further comprises a sending device 507 arranged for sending a further configuration request message (1105, 1109) to the printer server 1002, the further configuration request message (1105, 1109) including a further suggestion of configuration options which differs from the earlier suggestion. (Specification, Page 8, Line 27 to Page 9, Line 2; Page 18, Lines 1-22, Figures 11b, 11c).

H. Regarding Claim 40, an entity 501 is claimed in which the entity 501 further comprises a sending device 508 arranged for sending a set attribute request message 1201 to the printer server 1002 after negotiating the configuration parameters, the set attribute request message 1201 comprising a coding table concerning a negotiated coding type. (Specification, Page 9, Lines 3-5; Page 18, Lines 25-31, Figure 12).

## GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1.      Are Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61 and 64-71 obvious in view of U. S. Patent No. 6,379,058 to Petteruti et al. (*"Petteruti"*) and Mettala, "Bluetooth Protocol Architecture" (*"Mettala"*) ?

2.      Are Claims 11 and 39 obvious over *Petteruti* and *Mettala* in view of U. S. Patent No. 5,129,639 to DeHority (*"DeHority"*) ?

3.      Are Claims 15-16, 41-43 and 58-59 obvious over *Petteruti* and *Mettala* in view of U. S. Patent No. 5,682,379 to Mahany et al. (*"Mahany"*) ?

4.      Are Claims 21-23, 46 and 62-63 obvious over *Petteruti* and *Mettala* in view of U. S. Patent No. 6,163,538 to Brown et al. (*"Brown"*) ?

# ARGUMENT

## Stated Grounds of Rejection

Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61 and 64-71 stand rejected under

35 U.S.C. § 103(a) as being obvious in view of U.S. Patent No. 6,379,058 to Petteruti et al.

("*Petteruti*") and Mettala, "Bluetooth Protocol Architecture" ("*Mettala*"). Claims 11 and 39

stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Petteruti and Mettala in view

of U.S. Patent No. 5,129,639 to DeHority ("*DeHority*"). Claims 15-16, 41-43 and 58-59 stand

rejected under 35 U.S.C. § 103(a) as being unpatentable over *Petteruti* and *Mettala* in view of

U.S. Patent No. 5,682,379 to Mahany et al. ("*Mahany*"). Claims 21-23, 46 and 62-63 stand

rejected under 35 U.S.C. § 103(a) as being unpatentable over *Petteruti* and *Mettala* in view of

U.S. Patent No. 6,163,538 to Brown et al. ("*Brown*").

## Legal Standards

Under 35 U.S.C. §103, the "scope and content of the prior art are to be determined;

differences between the prior art and the claims at issue are to be ascertained; and the level of

ordinary skill in the pertinent art resolved. Against this background, the obviousness or

nonobviousness of the subject matter is determined." *Graham v. John Deere Co.*, 383 U.S. 1,

148 USPQ 459, 467 (1966). Obviousness cannot be inferred from a combination of references

without a showing that one of ordinary skill would have been motivated to combine those

references. When "prior art references require selective combination . . . to render obvious a

subsequent invention, there must be some reason for the combination other than the hindsight

gained from the invention itself . . . . Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination." *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), *quoting Interconnect Planning Corp. v. Feil*, 227 USPQ 543 (Fed. Cir. 1985) and *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick*, 221 USPQ 481 (Fed. Cir. 1984).

During *ex parte* examinations of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of non-obviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 USPQ 870, 873 (Fed. Cir. 1985). A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not be based on an applicant's disclosure. MPEP § 2142.

In order to establish obviousness by combining references there must be some teaching or suggestion in the prior art to combine the references. *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957, 43 USPQ2d 1294, 1297 (Fed.Cir. 1997) ("It is insufficient to establish obviousness that the separate elements of an invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the references."); *In re Rouffet*, 149 F.3d 1350, 1355-56, 47 USPQ2d 1453, 1456 (Fed.Cir. 1998) ("When a rejection depends on a combination of prior art references, there must be some teaching, or motivation to combine the references.").

Evidence of a motivation to combine prior art references must be clear and particular if the trap of "hindsight" is to be avoided. *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999) (Evidence of a suggestion, teaching or motivation to combine prior art references must be "clear and particular." "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'"). *In re Roufett*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed.Cir. 1998) ("[R]ejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself

as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be 'an illogical and inappropriate process by which to determine patentability.'").

## Analysis of Examiner's Rejections

The cited references are briefly discussed in relevant part for the appropriate rejections, and each rejection is addressed separately below.

## Ground of Rejection 1: Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61 and 64-71 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of U.S. Patent No. 6,379,058 to Petteruti et al. ("*Petteruti*") and Mettala, "Bluetooth Protocol Architecture" ("*Mettala*")

### Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61 and 64-71

The Appellants respectfully direct the Board's attention to Claim 1.

1. A method for printing a document in a data communications system using a Bluetooth protocol stack including a wireless printer protocol and a Logical Link Control and Adaptation Protocol (L2CAP), the method comprising the steps of:

establishing a bi-directional wireless asynchronous connection-less (ACL) connection between a processing unit including a printer client and a printer including a printer server, wherein establishing the ACL connection comprises the wireless printer protocol calling the L2CAP requesting the ACL connection and the L2CAP creating the ACL connection;

establishing a connection for one or more print jobs between the printer client and the printer server;

negotiating configuration parameters between the printer client and the printer server;

sending keep alive messages repeatedly from the printer client to the printer server and from the printer server to the printer client, wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters, wherein the connection between the printer client and the printer server is closed when at least one of: (i) the printer client fails to receive one or more of the keep alive messages from the printer server, (ii) the printer client fails to communicate one or more of the keep alive messages to the printer server, (iii) the printer server fails to receive one or more of the keep alive messages from the printer client, and (iv) the printer server fails to communicate one or more of the keep alive messages from the printer client;

starting a print job;

sending print data from the processing unit to the printer;

stopping the print job; and

closing the ACL connection between the processing unit and the printer.
(Emphasis added).

The *Petteruti* reference recites a system for RF communications between a host 28 (e.g., terminal 28) and a printer 10 using RF signal transmissions. (*Petteruti*, Abstract). The host 28 can identify a printer 10 using different techniques, such as optically scanning a bar code on the printer 10, receiving an identification of the printer 10 in an RF signal, or allowing a user to manually type an identification of the printer 10. (*Petteruti*, Column 5, Line 45 – Column 6, Line 1). The host 28 then sends a wake up packet to the printer 10, and the printer 10 responds with a ready packet. (*Petteruti*, Column 6, Lines 10-20). After that, the host 28 sends a force link packet to the printer 10, and the printer 10 responds with an accept link packet. (*Petteruti*, Column 6, Lines 20-23). This initializes a link between the host 28 and the printer 10, and the host 28 may transmit data to the printer 10 for printing in data packets. (*Petteruti*, Column 6, Lines 43-48).

The *Mettala* reference is cited by the June 8, 2006 Office Action only as allegedly disclosing the use of a "Bluetooth protocol stack including a Link Control and Adaptation Protocol (L2CAP) that allows an asynchronous connection-less (ACL) connection." (June 8, 2006 Office Action, Page 4, Lines 12-14). The *Mettala* reference is not cited by the June 8, 2006 Office Action as disclosing, teaching, or suggesting any other elements of Claim 1.

For the reasons set forth below, the Appellants respectfully submit that the June 8, 2006 Office Action has not established that the proposed *Petteruti-Mettala* combination discloses, teaches, or suggests all the elements of independent Claim 1 (and its dependent claims). Similarly, for the reasons set forth below, the Appellants also respectfully submit that the June 8, 2006 Office Action has not established that the proposed *Petteruti-Mettala* combination

discloses, teaches, or suggests all the elements of independent Claims 35 and 53 (and their dependent claims).

Independent Claims 1, 35 and 53 each recite that at least some "keep alive messages" are sent "periodically" after "negotiation" of "configuration parameters." The proposed *Petteruti-Mettala* combination fails to disclose, teach, or suggest at least these elements of Claims 1, 35 and 53. The June 8, 2006 Office Action cites various messages in the *Petteruti* reference as supposedly anticipating the "keep alive messages" recited in Claims 1, 35 and 53. For the reasons set forth below, the Appellants respectfully disagree with the Examiner's characterization of the content of the *Petteruti* reference.

The various messages in the *Petteruti* reference include (1) wakeup packets, (2) force link packets, (3) data packets, (4) ready packets, (5) accept link packets, (6) handshake packets, (7) no link packets, and (8) broadcast link request packets. (*Petteruti*, Column 6, Lines 56-66). Figures 4-7C illustrate how these messages or packets are used. For example, Figure 4 illustrates how the wakeup, ready, force link, and accept link packets may be used. However, none of these packets is both (i) sent "periodically" (ii) "after negotiation of the configuration parameters." The remaining figures also illustrate how the various messages or packets are used, but none of these messages is both (i) sent "periodically" (ii) "after negotiation of the configuration parameters."

For example, both the "wakeup packet" and the "ready packet" of *Petteruti* are not sent **after** negotiation of configuration parameters. They are sent **during** the negotiation process.

The "wakeup packet" includes negotiation bits that are set by the host 28. (*Petteruti*, Column 8, Lines 20-34). The "ready packet" that is sent by the printer 10 in response to the receipt of the "wakeup packet" includes negotiation bits that are set by the printer 10. (*Petteruti*, Column 8, Lines 24-59). It is clear that the "wakeup packet" and the "ready packet" are sent during (and not after) the negotiation of the configuration parameters.

The other types of packets described in the *Petteruti* reference are also not "keep alive messages" of the type disclosed and claimed by the Appellants that are "sent periodically after negotiation of the configuration parameters."

The Examiner stated that the *Petteruti* reference teaches "sending keep alive messages repeatedly from the printer client to the printer server and from the printer server to the printer client (column 6, lines 49-66, both the printer and the host can send different types of packets that maintain connection), wherein at least some of the keep alive messages are sent periodically (e.g., the expect packet was sent from time to time (periodically), column 7, lines 23-25, column 7, lines 65-67, column 8, lines 1-5) after negotiation of the configuration parameters (the wake up packet is sent before data packet, column 6, lines 1-20, column 8, lines 20-60), the stay alive message identifying whether the connection between the printer client and the printer server remains established (e.g., the expected response packet, column 7, lines 20-30, will identify, to the receiving side that the connection remains established, other wise, the receiving side will not received the expected response packet/message; also see column 10, lines 1-27)" (June 8, 2006 Office Action, Page 3, Lines 3-14).

The Appellants respectfully traverse these conclusions of the Examiner. There is no disclosure of an "expect packet" in the *Petteruti* reference. There is also no disclosure of an "expected response packet" in the *Petteruti* reference. While a "wakeup packet" is sent before a "data packet" the "wakeup packet" is not sent <u>after</u> the negotiation of the configuration parameters.

Furthermore, the *Petteruti* "data packet" does <u>not</u> perform the function of a keep alive message. When the *Petteruti* printer 10 receives a "data packet" the printer 10 performs a checksum process. If the checksum process is successfully completed the printer 10 sends a "handshake packet" back to the host server 28. If the checksum process is <u>not</u> successfully completed the printer 10 does <u>not</u> send any packet back to the host server 28. (*Petteruti*, Column 7, Line 66 to Column 8, Line 5).

When the host server 28 does not receive a response, the host server 28 resends the "data packet" with the same sequence number. (*Petteruti*, Column 7, Lines 24-27). Because the host server 28 automatically <u>resends</u> the "data packet" the host server 28 does not know whether the connection is closed or is still open. That is, the "data packet" is not a "stay alive message identifying whether the connection between the printer client and the printer server remains established." In addition, none of the other types of packets described in the *Petteruti* reference are "keep alive messages" of the type disclosed and claimed by the Appellants that are "sent periodically after negotiation of the configuration parameters."

For these reasons the Appellants respectfully submit that the *Petteruti* reference fails to disclose, teach, or suggest the elements of independent Claims 1, 35 and 53.

Furthermore, the *Mettala* reference does not disclose, teach, or suggest "keep alive messages" of the type disclosed and claimed by the Appellants that are "sent periodically after negotiation of the configuration parameters." Therefore, the *Mettala* reference can not and does not remedy the deficiencies of the *Petteruti* reference.

As a result, the June 8, 2006 Office Action has not established that the proposed combination of the *Petteruti* reference and the *Mettala* reference discloses, teaches, or suggests all of the elements of independent Claims 1, 35 and 53. For these reasons, the June 8, 2006 Office Action has not established a *prima facie* case of obviousness against independent Claims 1, 35 and 53 (and their dependent claims). The dependent claims are patentable due to their dependence from allowable base claims.

In addition, the dependent claims are patentable in light of recitation of their own additional elements. For example, Claims 12 and 40 recite sending a "set attribute request message . . . after negotiating the configuration parameters," where the "set attribute request message" includes "a coding table concerning a negotiated coding type." The July 8, 2006 Office Action cites various portions of *Petteruti* when rejecting these claims. However, none of the cited portions say anything about sending a message containing a "coding table" that concerns a "negotiated coding type" after configuration parameters have been negotiated. As a result, the July 8, 2006 Office Action has not established that the proposed combination of *Petteruti* and *Mettala* discloses, teaches, or suggests all of the elements of Claim 12 and Claim 40.

For these reasons, the Appellants' invention as claimed in Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61 and 64-71 is not obvious in view of the proposed *Petteruti-Mettala* combination. Accordingly, the Appellants respectfully requests that the § 103(a) rejection of Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61 and 64-71 be withdrawn and that the claims be passed to allowance.

**Ground of Rejection 2: Claims 11 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over _Petteruti_ and _Mettala_ in view of U.S. Patent No. 5,129,639 to DeHority ("_DeHority_")**

### Claims 11 and 39

The Appellants respectfully direct the Board's attention to Claim 11.

> 11.    The method according to claim 10, further comprising the step of:
> sending a further configuration request message from the printer client to the printer server if the configuration options are not supported by the printer server, the further configuration request message including a suggestion of further configuration options which differs from the earlier suggestion.

The Appellants hereby repeat and incorporate by reference all of the comments and arguments previously made with respect to the rejections of Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61 and 64-71 set forth above.

The Examiner stated that "Regarding claim 11, Petteruti et al. & Mettala teach the method according to claim 10." (June 8, 2006 Office Action, Page 11, Line 18-19). The Appellants respectfully traverse this assertion of the Examiner. For the reasons set forth above, the Appellants respectfully submit that the _Petteruti-Mettala_ combination does not teach or suggest the elements of Claim 10.

The Examiner also stated that "Petteruti does not teach including sending a further configuration request message from the printer client to the printer server, if the configurations options are not supported by the printer server wherein the further configuration request message includes a suggestion of configuration options which differs from earlier suggestions." (June 8, 2006 Office Action, Page 12, Lines 1-4). The Appellants agree that the _Petteruti_ reference does not teach these elements of the Appellants' invention.

The Examiner suggested that the *DeHority* reference supplies the deficiency of the *Petteruti* reference and that it would have been obvious to combine the teaching of the *DeHority* reference with the suggested *Petteruti-Mettala* combination. (June 8, 2006 Office Action, Page 12, Lines 5-13). The Appellants respectfully traverse these assertions of the Examiner.

The *DeHority* reference describes a printer configuration control system that is capable of comparing print job requirements to the capability of a printer and determining the best match between them. (*DeHority*, Abstract). The *DeHority* system searches for stapling mismatches, duplex requirements mismatches, stacking mismatches, folding mismatches and paper mismatches. (*DeHority*, Column 3, Line 51 to Column 4, Line 19). If a mismatch is detected, the *DeHority* system notifies a person who is operating the system of the mismatch. The *DeHority* system then sets a timer and waits for the person to decide whether to change the printer configuration. (*DeHority*, Column 4, Lines 19-51).

The *DeHority* system sends a mismatch signal to the person who is operating the printer. The *DeHority* system does not send a configuration request message from a printer client to a printer server when the configurations options are not supported by the printer server and does not send a configuration request message that includes a suggestion of configuration options that differs from earlier suggestions. The *DeHority* system reports the existence of a problem to a human operator but does not make any suggestions on how to resolve the problem. The *DeHority* system awaits instructions from the human operator.

Therefore, even if it were proper (and the Appellants do not agree that it is proper) to combine the *DeHority* reference with the combination of the *Petteruti* reference and the

*Mettala* reference, the combination of the three references would still not disclose, teach or suggest the elements of the Appellants' invention set forth in Claim 11.

Therefore, the Examiner has failed to establish that the proposed *Petteruti-Mettala-DeHority* combination discloses, teaches, or suggests the elements of Claim 11.

The Examiner also stated that "Claim 39 recites identical features as claim 11 except that claim 39 is an apparatus claim. Thus, arguments similar to that presented above for claim 11 are equally applicable to claim 39." (June 8, 2006 Office Action, Page 12, Lines 14-16). The Applicants respectfully traverse this assertion of the Examiner. For the reasons set forth above, the proposed *Petteruti-Mettala-DeHority* combination also does not disclose, teach, or suggest the elements of Claim 39.

Accordingly, the Appellants respectfully request that the § 103(a) rejection of Claim 11 and Claim 39 be withdrawn and that Claim 11 and Claim 39 be passed to allowance.

**Ground of Rejection 3: Claims 15-16, 41-43 and 58-59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over _Petteruti_ and _Mettala_ in view of U.S. Patent No. 5,682,370 to Mahany et al. ("_Mahany_")**

<u>Claims 15-16, 41-43 and 58-59</u>

The Appellants respectfully direct the Board's attention to Claim 15.

15.    The method according to claim 1, wherein a keep alive timer is implemented in the printer client and in the printer server, and the method further comprises the step of:
starting the keep alive timer at one of the printer server and the printer client each time a valid message is received from the other of the printer server and the printer client.

The Appellants hereby repeat and incorporate by reference all of the comments and arguments previously made with respect to the rejections of Claims 1-11, 12-14, 17-20, 24-39, 40, 44-45, 47-57, 60-61 and 64-71 set forth above.

The Examiner stated that "Regarding claims 15 and 16, Petteruti et al. & Mettala teach the method according to claim 1." (June 8, 2006 Office Action, Page 11, Line 18-19). The Appellants respectfully traverse this assertion of the Examiner. For the reasons set forth above, the Appellants respectfully submit that the _Petteruti-Mettala_ combination does not teach or suggest the elements of Claim 1.

The Examiner also stated that "Petteruti et al. & Mettala do not teach a keep alive timer implemented in the printer client." (June 8, 2006 Office Action, Page 13, Lines 4-6). The Appellants agree that the _Petteruti_ reference and the _Mettala_ reference do not teach a keep alive timer implement in a printer client.

The Examiner suggested that the *Mahany* reference supplies the deficiency of the *Petteruti* reference and the *Mettala* reference and that it would have been obvious to combine the teaching of the *Mahany* reference with the suggested *Petteruti-Mettala* combination. (June 8, 2006 Office Action, Page 13, Lines 7-16). The Appellants respectfully traverse these assertions of the Examiner.

The *Mahany* reference describes a wireless personal local area network (LAN) system that is capable of connecting a computer terminal and one or more peripheral devices. (*Mahany*, Abstract). The *Mahany* system describes a system in which one device acts as a LAN master device. A printer device can be designated as the master device. (*Mahany*, Column 10, Lines 58-59). The other devices in the LAN are slave devices.

The *Mahany* reference states that when a slave device has data to transmit to the master device the slave device transmits a message to the master device during a time period 217. The slave device then executes a backoff algorithm to determine how long it must wait before transmitting the data. "The slave determines from the backoff algorithm that it must wait the time period 227 before transmitting the date during the time period 221. The slave devices use the backoff algorithm in an attempt to avoid the collision of data with that from other slave devices which are also trying to communicate with the master." (*Mahany*, Column 12, Lines 19-24).

The cited portion of the *Mahany* reference shows that the *Mahany* slave device does not comprise a keep alive timer of the type disclosed and claimed by the Appellants. The keep alive timer of the present invention repeatedly sends keep alive messages from the printer client to the printer server and from the printer server to the printer client, wherein at least some of the keep

alive messages are sent periodically after negotiation of the configuration parameters.

The time period used in the backoff algorithm of the *Mahany* reference does not do this. The time period used in the backoff algorithm of the *Mahany* reference is only used to avoid collision of competing messages that are sent to the master unit. If there is a collision of messages, the backoff algorithm automatically waits for a predetermined time and tries to send the message again. The slave unit of the *Mahany* reference does not send any keep alive messages of the type disclosed and claimed by the Appellants. The *Mahany* reference does not disclose or suggest the concept of sending keep alive messages from the printer client to the printer server and from the printer server to the printer client, wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters.

Therefore, even if it were proper (and the Appellants do not agree that it is proper) to combine the *Mahany* reference with the combination of the *Petteruti* reference and the *Mettala* reference, the combination of the three references would still not disclose, teach or suggest the elements of the Appellants' invention set forth in Claim 15 or in Claim 16.

Therefore, the Examiner has failed to establish that the proposed *Petteruti-Mettala-Mahany* combination discloses, teaches, or suggests the elements of Claim 15 or of Claim 16.

The Examiner also stated that "Claims 41, 42, 43, 58 & 59 recite identical features as claims 15, 15, 16, 15, & 15, respectively, except claims 41, 42, 43, 58 & 59 are apparatus claims. Thus, arguments similar to that presented above for claims 15, 15, 16, 15, & 15 are equally applicable to claims 41, 42, 43, 58, & 59." (June 8, 2006 Office Action, Page 13, Lines 17-20). The Applicants respectfully traverse these assertions of the Examiner. For the reasons set

forth above, the proposed *Petteruti-Mettala-Mahany* combination also does not disclose, teach, or suggest the elements of Claims 41, 42, 43, 58 & 59.

Accordingly, the Appellants respectfully request that the § 103(a) rejections of Claims 15-16, 41-43 and 58-59 be withdrawn and that Claims 15-16, 41-43 and 58-59 be passed to allowance.

## Ground of Rejection 4: Claims 21-23, 46 and 62-63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Petteruti* and *Mettala* in view of U.S. Patent No. 6,163,538 to Brown et al. ("*Brown*")

### Claims 21-23, 46 and 62-63

The Appellants respectfully direct the Board's attention to Claim 21.

21.    The method according to claim 1, further comprising the step of:
indicating that the printer is out of paper in a message sent from the printer
server to the printer client.

The Appellants hereby repeat and incorporate by reference all of the comments and arguments previously made with respect to the rejections of Claims 1-11, 12-20, 24-39, 40-45, 47-61 and 64-71 set forth above.

The Examiner stated that "Regarding claims 21 & 22, Petteruti et al. & Mettala teach the method according to claim 1, but do not teach indicating that the printer is out of paper in a message sent from the printer server to the printer client, nor do they teach indicating that the printer is refilled in a message sent from the printer server to the printer client." (June 8, 2006 Office Action, Page 14, Lines 4-7). For the reasons set forth above, the Appellants respectfully traverse the assertion of the Examiner that the *Petteruti-Mettala* combination teaches or suggests

the elements of Claim 1. The Appellants agree that the *Petteruti* reference and the *Mettala* reference do not teach indicating that the printer is out of paper or that the paper has been refilled by sending a message from the printer server to the printer client.

The Examiner suggested that the *Brown* reference supplies the deficiency of the *Petteruti* reference and the *Mettala* reference and that it would have been obvious to combine the teaching of the *Brown* reference with the suggested *Petteruti-Mettala* combination. (June 8, 2006 Office Action, Page 14, Lines 8-17). The Appellants respectfully traverse these assertions of the Examiner.

The *Brown* reference describes a wireless serial port transceiver system that is designed to replace cable connections from a host to a portable bar-code printer or the like. (*Brown*, Abstract). The *Brown* reference does not disclose or suggest the concept of sending keep alive messages from the printer client to the printer server and from the printer server to the printer client, wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters.

Furthermore, the *Brown* reference does not disclose the concept of indicating that the printer is out of paper in a message sent from the printer server to the printer client. The *Brown* system only indicates that the printer is not ready. The *Brown* system does not determine the reason that the printer is not ready. The "printer not ready" status signal of the *Brown* system is very general and does not determine whether the printer (1) is turned off, or (2) is not plugged in, or (3) is out of paper. (*Brown*, Column 15, Lines 15-25).

Therefore, even if it were proper (and the Appellants do not agree that it is proper) to combine the *Brown* reference with the combination of the *Petteruti* reference and the *Mettala* reference, the combination of the three references would still not disclose, teach or suggest the elements of the Appellants' invention set forth in Claim 21 or in Claim 22 or in Claim 23.

Therefore, the Examiner has failed to establish that the proposed *Petteruti-Mettala-Brown* combination discloses, teaches, or suggests the elements of Claims 21-23.

The Examiner also stated that "Claims 46, 62 & 63 recite identical features as claims 23, 21, & 22, respectively, except claims 46, 62, 63 are apparatus claims. Thus, arguments similar to that presented above for claims 23, 21, & 22 are equally applicable to claims 46, 62, & 63." (June 8, 2006 Office Action, Page 15, Lines 1-3). The Applicants respectfully traverse these assertions of the Examiner. For the reasons set forth above, the proposed *Petteruti-Mettala-Brown* combination also does not disclose, teach, or suggest the elements of Claims 46, 62 and 63.

Accordingly, the Appellants respectfully request that the § 103(a) rejections of Claims 21-23, 46 and 62-63 be withdrawn and that Claims 21-23, 46 and 62-63 be passed to allowance.

# REQUESTED RELIEF

The Board is respectfully requested to reverse the outstanding rejections and return this application to the Examiner for allowance.

The Commissioner is hereby authorized to charge any fees connected with this communication (including any extension of time fees) or credit any overpayment to Munck Butrus Deposit Account No. 50-0208.

Respectfully submitted,

MUNCK BUTRUS, P.C.

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# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:          Orjan Fritz et al.

Serial No.:          09/867,429

Filed:          May 13, 2001

For:          METHOD, AND ARRANGEMENT IN A
          COMMUNICAITONS NETWORK

Technology Center:          2600

Group No.:          2625

Examiner:          King Y. Poon

## APPENDIX A -
## Claims Appendix

1.     A method for printing a document in a data communications system using a

Bluetooth protocol stack including a wireless printer protocol  and a Logical Link Control and

Adaptation Protocol (L2CAP), the method comprising the steps of:

establishing a bi-directional wireless asynchronous connection-less (ACL) connection

between a processing unit including a printer client and a printer including a printer server,

wherein establishing the ACL connection comprises the wireless printer protocol calling the

L2CAP requesting the ACL connection and the L2CAP creating the ACL connection;

establishing a connection for one or more print jobs between the printer client and the

printer server;

negotiating configuration parameters between the printer client and the printer server;

sending keep alive messages repeatedly from the printer client to the printer server and

from the printer server to the printer client, wherein at least some of the keep alive messages are

sent periodically after negotiation of the configuration parameters, wherein the connection

between the printer client and the printer server is closed when at least one of: (i) the printer

client fails to receive one or more of the keep alive messages from the printer server, (ii) the

printer client fails to communicate one or more of the keep alive messages to the printer server,

(iii) the printer server fails to receive one or more of the keep alive messages from the printer

client, and (iv) the printer server fails to communicate one or more of the keep alive messages

from the printer client;

starting a print job;

sending print data from the processing unit to the printer;

stopping the print job; and

closing the ACL connection between the processing unit and the printer.


2.    The method according to claim 1, further comprising the step of:

selecting the printer from a number of available printers before establishing the ACL

connection.

3.      The method according to claim 2, wherein the step of selecting the printer comprises using a Device Discovery Protocol.

4.      The method according to claim 1, further comprising the step of:

obtaining an address of the printer before establishing the ACL connection.

5.      The method according to claim 4, wherein the step of obtaining the address of the printer comprises using a Device Discovery Protocol.

6.      The method according to claim 5, wherein establishing the connection for the one or more print jobs comprises sending a connection request message from the printer client to the printer server.

7.      The method according to claim 6, wherein establishing the connection for the one or more print jobs further comprises responding to the connection request message in a response message sent from the printer server to the printer client regardless of whether the connection is successful.

8. The method according to claim 1, wherein the step of negotiating the configuration parameters between the printer client and the printer server comprises the printer client requesting configuration in a configuration request message sent to the printer server, the configuration request message including no new options if the printer client uses default values.

9. The method according to claim 1, wherein the step of negotiating the configuration parameters between the printer client and the printer server comprises the printer client requesting configuration in a configuration request message sent to the printer server, the configuration request message including a suggestion of configuration options.

10. The method according to claim 9, wherein said configuration request message is responded to by the printer server in a response message indicating whether the configuration options in the configuration request message are supported by the printer server.

11. The method according to claim 10, further comprising the step of:

sending a further configuration request message from the printer client to the printer server if the configuration options are not supported by the printer server, the further configuration request message including a suggestion of further configuration options which differs from the earlier suggestion.

12.    The method according to claim 1, further comprising the step of:

sending a set attribute request message from the printer client to the printer server after

negotiating the configuration parameters, the set attribute request message comprising a coding

table concerning a negotiated coding type.

13.    The method according to claim 12, further comprising the step of:

loading the coding table at the printer server.

14.    The method according to claim 13, further comprising the step of:

sending a response to the set attribute request message from the printer server to the

printer client regardless of whether the loading was successful.

15.    The method according to claim 1, wherein a keep alive timer is implemented in

the printer client and in the printer server, and the method further comprises the step of:

starting the keep alive timer at one of the printer server and the printer client each time a

valid message is received from the other of the printer server and the printer client.

16.    The method according to claim 15, further comprising the step of:

closing the connection between the printer client and the printer server when the keep

alive timer expires.

17.     The method according to claim 1, wherein the step of starting the print job comprises the printer client requesting that the printer server start the print job in a request message.

18.     The method according to claim 17, wherein said request message is received and confirmed by the printer server and a confirmation is sent in a response message to the printer client.

19.     The method according to claim 1, wherein the step of sending the print data from the processing unit to the printer comprises sending the print data in a number of print data request messages.

20.     The method according to claim 19, further comprising the step of:

sending an acknowledgement message from the printer server to the printer client after the printer server has received a predetermined number of the print data request messages.

21.     The method according to claim 1, further comprising the step of:

indicating that the printer is out of paper in a message sent from the printer server to the printer client.

22.     The method according to claim 21, further comprising the step of:

indicating that the printer is refilled with paper in another message sent from the printer server to the printer client.

23.     The method according to claim 22, further comprising the step of:

continuing the printing by continuing to send print data request messages to the printer server starting with the print data request message subsequent to a last received print data acknowledgement message.

24.     The method according to claim 1, further comprising the step of:

stopping a keep alive timer when the ACL connection is disconnected during printing.

25.     The method according to claim 24, further comprising the step of:

requesting a reconnection of a session defined by a session identifier in a message sent from the printer client to the printer server.

26.     The method according to claim 25, further comprising the step of:

sending a response according to whether the reconnection is granted in a response message from the printer server to the printer client.

27.    The method according to claim 26, further comprising the step of:

continuing the printing by continuing to send print data request messages after the printer client receives a granted reconnection response starting with the print data request message subsequent to a last received print data acknowledgement message.

28.    The method according to claim 1, wherein the step of stopping the print job comprises sending a request to stop the print job in a message from the printer client to the printer server.

29.    The method according to claim 28, further comprising the step of:

sending a response message comprising a confirmation from the printer server to the printer client after the printer server receives the request to stop the print job.

30.    The method according to claim 1, wherein the step of closing the ACL connection between the processing unit and the printer comprises the printer client requesting a disconnection of a session defined by a session identity in a message sent to the printer server.

31.    The method according to claim 30, wherein the printer server indicates whether the disconnection was granted in a response message sent from the printer server to the printer client.

32.     The method according to claim 1, further comprising the step of:

stopping the sending of the keep alive messages after the ACL connection is closed.

33.     A computer program product loadable into an internal memory of a digital computer within at least one of a processing unit and a printer in a communication system, the computer program product comprising software code portions for performing the steps of claim 1 when said product is executed.

34.     (Previously Presented)     A computer program product stored on a computer usable medium, the computer program product comprising readable program code for causing a computer within at least one of a processing unit and a printer in a communication system to control an execution of the steps of claim 1.

35.    An entity in a processing unit, the entity comprising:

a Bluetooth protocol stack comprising a Logical Link Control and Adaptation Protocol (L2CAP) and a wireless printer protocol, the wireless printer protocol comprising a printer client capable of communicating with a printer server in a printer;

an establishing device arranged for establishing a bi-directional wireless asynchronous connection-less (ACL) connection to the printer by calling the L2CAP requesting the connection;

an establishing device arranged for establishing a connection for one or more print jobs between the printer client and the printer server;

a negotiating device arranged for negotiating configuration parameters with the printer server;

a sending device arranged for sending keep alive messages repeatedly to the printer server, wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters, wherein the connection between the printer client and the printer server is closed when at least one of: (i) the sending device fails to communicate one or more of the keep alive messages to the printer server, and (ii) the printer client fails to receive one or more keep alive messages from the printer server;

a starting device arranged for starting a print job;

a sending device arranged for sending print data to the printer server;

a stopping device arranged for stopping the print job; and

a closing device arranged for closing the ACL connection between the processing unit and the printer.

36.    The entity according to claim 35, wherein the establishing device for establishing the connection for the one or more print jobs comprises a sending device arranged for sending a connection request message from the printer client to the printer server.

37.    The entity according to claim 35, wherein the negotiating device uses default values when negotiating the configuration parameters and comprises a sending device arranged for sending a configuration request message to the printer server, the configuration request message including no new options.

38.    The entity according to claim 35, wherein the negotiating device comprises a sending device arranged for sending a configuration request message to the printer server, the configuration request message including a suggestion of configuration options.

39. The entity according to claim 38, wherein the negotiating device further comprises a sending device arranged for sending a further configuration request message to the printer server, the further configuration request message including a further suggestion of configuration options which differs from the earlier suggestion.

40. The entity according to claim 35, wherein the entity further comprises a sending device arranged for sending a set attribute request message to the printer server after negotiating the configuration parameters, the set attribute request message comprising a coding table concerning a negotiated coding type.

41. The entity according to claim 35, wherein a keep alive timer is implemented in the printer client.

42. The entity according to claim 41, wherein the entity further comprises a starting device arranged for starting the keep alive timer each time a valid message is received from the printer.

43. The entity according to claim 42, wherein the entity further comprises a closing device arranged for closing the connection between the printer client and the printer server when the keep alive timer expires.

44.     The entity according to claim 35, wherein the starting device comprises a sending device arranged for sending a request message to the printer server, the request message comprising a request to start the print job.

45.     The entity according to claim 35, wherein the sending device for sending the print data to the printer server comprises a sending device arranged for sending a number of print data request messages to the printer server, the print data request messages comprising the print data.

46.     The entity according to claim 45, wherein the entity further comprises a continuing device arranged for continuing the printing when the printing is interrupted by a refill of paper at the printer, the printing continued by continuing to send the print data request messages to the printer server starting with the print data request message subsequent to a last received print data acknowledgement message.

47.     The entity according to claim 41, wherein the entity further comprises a stopping device arranged for stopping the keep alive timer when the ACL connection is disconnected during the printing.

48.     The entity according to claim 35, wherein the entity further comprises a requesting device arranged for requesting a reconnection of a session defined by a session identifier in a message sent to the printer server after a break in the ACL connection.

49.    The entity according to claim 48, wherein the entity further comprises a continuing device arranged for continuing the printing in response to a granted reconnection response message by continuing to send print data request messages to the printer server starting with the print data request message subsequent to a last received print data acknowledgement message.

50.    The entity according to claim 35, wherein the stopping device comprises a sending device arranged for sending a message to the printer server, the message comprising a request to stop the print job.

51.    The entity according to claim 35, wherein the closing device comprises a sending device arranged for sending a message to the printer server, the message comprising a request to disconnect a session identified by a session identity.

52.    The entity according to claim 35, wherein the entity further comprises a stopping device arranged for stopping the sending of the keep alive messages after the closing of the connection between the printer client and the printer server.

53.     A printer entity in a printer, the printer entity comprising:

a Bluetooth protocol stack comprising a Logical Link Control and Adaptation Protocol (L2CAP) and a wireless printer protocol, the wireless printer protocol comprising a printer server which communicates with a printer client in a processing unit;

a negotiating device arranged for negotiating configuration parameters with the printer client;

a sending device arranged for sending keep alive messages repeatedly to the printer client, wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters, wherein the connection between the printer client and the printer server is closed when at least one of: (i) the sending device fails to communicate one or more of the keep alive messages to the printer client, and (ii) the printer server fails to receive one or more keep alive messages from the printer client;

a starting device arranged for starting a print job;

a receiving device arranged for receiving print data from the printer client; and

a stopping device arranged for stopping the print job.


54.     The printer entity according to claim 53, wherein the printer entity further comprises a responding device arranged for responding to a connection request in a response message sent to the printer client regardless of whether the connection is successful.

55.     The printer entity according to claim 53, wherein the negotiating device comprises a responding device arranged for responding to a configuration request regardless of whether configuration options in the configuration request are supported by the printer server.

56.     The printer entity according to claim 53, wherein the negotiating device comprises a loading device arranged for loading a coding table sent from the printer client.

57.     The printer entity according claim 56, wherein the negotiating device further comprises a sending device arranged for sending a response to the printer client regardless of whether the loading was successful.

58.     The printer entity according to claim 53, wherein a keep alive timer is implemented in the printer server.

59.     The printer entity according to claim 58, wherein the printer entity further comprises a starting device arranged for starting the keep alive timer each time a valid message is received from the processing unit.

60.     The printer entity according to claim 53, wherein the starting device comprises a confirming device arranged for confirming a start print job request message sent from the printer client.

61.     The printer entity according to claim 53, wherein the receiving device comprises a sending device arranged for sending an acknowledgement message to the printer client after receiving a predetermined number of print data request messages.

62.     The printer entity according to claim 53, wherein the printer entity further comprises an indicating device arranged for indicating, in a message sent to the printer client, that the printer is out of paper.

63.     The printer entity according to claim 53, wherein the printer entity further comprises an indicating device arranged for indicating, in a message sent to the printer client, that the printer is refilled with paper.

64.     The printer entity according to claim 53, wherein the printer entity further comprises a stopping device arranged for stopping a keep alive timer when an asynchronous connection-less (ACL) connection to the processing unit is disconnected during printing.

65.     The printer entity according to claim 53, wherein the printer entity further comprises a sending device arranged for sending a response message to the printer client according to whether a reconnection request is granted.

66.     The printer entity according to claim 53, wherein the stopping device comprises a sending device arranged for sending a response message comprising a confirmation after the printer server has received a request to stop the print job.

67.     The printer entity according to claim 53, wherein the printer entity further comprises a sending device arranged for sending a response message to the printer client according to whether a disconnection request is granted.

68.     The printer entity according to claim 53, wherein the printer entity further comprises a stopping device arranged for stopping the sending of the keep alive messages after the connection to the printer client is closed.

69. A communications system comprising:

a processing unit according to claim 35; and

a printer entity in a printer, the printer entity comprising:

a Bluetooth protocol stack comprising a Logical Link Control and Adaptation Protocol (L2CAP) and a wireless printer protocol, the wireless printer protocol comprising a printer server which communicates with a printer client in the processing unit;

a negotiating device arranged for negotiating configuration parameters with the printer client;

a sending device arranged for sending keep alive messages repeatedly to the printer client, wherein at least some of the keep alive messages are sent periodically after negotiation of the configuration parameters, wherein the connection between the printer client and the printer server is closed when at least one of: (i) the sending device fails to communicate one or more of the keep alive messages to the printer client, and (ii) the printer server fails to receive one or more keep alive messages from the printer client;

a starting device arranged for starting a print job;

a receiving device arranged for receiving print data from the printer client; and

a stopping device arranged for stopping the print job.

70. The method of Claim 1, wherein at least some of the keep alive messages inform one of the printer server and the printer client that the other of the printer server and the printer client is hard loaded and is operating more slowly than normal.

71.     The method of Claim 1, wherein each keep alive message only results in one of

the printer server and the printer client restarting a keep alive timer.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:          Orjan Fritz et al.

Serial No.:                    09/867,429

Filed:                         May 13, 2001

For:                           METHOD, AND ARRANGEMENT IN A
                               COMMUNICAITONS NETWORK

Technology Center:             2600

Group No.:                     2625
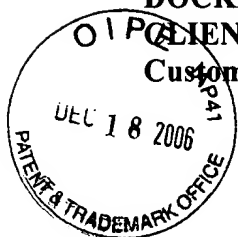
Examiner:                      King Y. Poon

# APPENDIX B
## Evidence Appendix

None

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:        Orjan Fritz et al.

Serial No.:                  09/867,429

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Examiner:                    King Y. Poon

# APPENDIX C
# Related Proceedings Appendix

None